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Paul J Farrell  
Dilworth & Barrese  
333 Earle Ovington Blvd  
Uniondale, NY 11553

EXAMINER

NGUYEN, TOAN D

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 07/09/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/577,512

Applicant(s)

CHANG ET AL.

Examiner

Toan D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (US 6,226,301) in view of Johansson et al. (US 6,473,399) further in view of Ahmadvand et al. (US 6,542,490).

For claim 1, Cheng et al. disclose method and apparatus for segmentation and assembly of data frames for retransmission in a telecommunications system comprising the steps of:

providing a frame sequence number (figure 3, reference 306) of a requested frame (figure 3, reference 300) to each of said data segments (col. 7 lines 56-63);

providing a byte number corresponding to a start byte of each data segment to each of said data segments (col. 2 lines 39-44);

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providing an indicator indicating whether or not each data segment is the last segment to each of said data segments (col. 2 lines 39-44 and col. 11 lines 19-24); and

providing a data stream to each of said data segments (figure 6, col. 8 line 66 to col. 9 line 14).

Cheng et al. do not disclose a data stream within at least one data frame is segmented into a plurality of data segments when retransmission is requested. In an analogous art, Johansson et al. disclose a data stream within at least one data frame is segmented into a plurality of data segments when retransmission is requested (figure 5, col. 6 lines 53-65).

One skilled in the art would have recognized one data frame is segmented into a plurality of data segments when retransmission is requested to use the teachings of Johansson et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the data frame is segmented into a plurality of data segments when retransmission is requested as taught by Johansson et al. in Cheng et al.'s system with the motivation being to provide a detection and analysis block to detect a PDU is either missing or erroneously received, a retransmit request signal is generated, e.g., in the form of a negative acknowledgement (NACK) or a selective acknowledgement (SACK) (col. 7 lines 12-16).

However, Cheng et al. in view of Johansson et al. do not disclose thereby allowing the data segments to be of varying lengths. In an analogous art, Ahmadvand et al. disclose thereby allowing the data segments to be of varying lengths (col. 4 line 14). One skilled in the art would have recognizes the data segments to be of varying lengths to use the teachings of Ahmadvand et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in

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the art at the time of the invention, to use the data segments to be of varying lengths as taught by Ahmadvand et al. in Cheng et al.'s system with the motivation being dynamically adjusted in response to the conditions of the communication link (col. 4 lines 14-16)

For claim 2, Cheng et al. disclose method and apparatus for segmentation and assembly of data frames for retransmission in a telecommunications system comprising the steps of:

a forward resequencing buffer (figure 1, reference 24) for storing data streams of transmitted frames together with associated frame sequence numbers, and for retransmitting requested frames (col. 6 line 67 to col. 7 line 3 and col. 7 lines 56-64);

a first register for storing a frame sequence number (figure 3, reference 306) indicating a retransmission requested frame (figure 3, reference 300) (col. 7 lines 65-66);

a second register for storing a byte sequence number indicating a start byte of frame segment obtained by segmenting a data stream of the retransmission-requested frame into a transmittable size (col. 7 line 66 to col. 8 line 4); and

a controller (figure 1, reference 18) for reading the data stream in the retransmission-requested frame from the forward resequencing buffer (figure 1, reference 24) (col. 6 line 58 to col. 7 line 15), and adding the frame sequence number and the byte sequence number corresponding to a start byte of each frame segment to each frame segment before transmission (figures 4 and 5B, col. 8 lines 12-27 and col. 8 lines 46-65),

thereby allowing the data segments to be of varying lengths (col. 1 lines 38-41 and col. 2 lines 20-).

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Cheng et al. do not disclose segmenting the read data stream into frame segments of the transmittable size. In an analogous art, Johansson et al. disclose segmenting the read data stream into frame segments of the transmittable size (figure 5, col. 6 lines 53-65).

One skilled in the art would have recognized segmenting the read data stream into frame segments of the transmittable size to use the teachings of Johansson et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the segmenting the read data stream into frame segments of the transmittable size as taught by Johansson et al. in Cheng et al.'s system with the motivation being to provide a detection and analysis block to detect a PDU is either missing or erroneously received, a retransmit request signal is generated, e.g., in the form of a negative acknowledgement (NACK) or a selective acknowledgement (SACK) (col. 7 lines 12-16).

However, Cheng et al. in view of Johansson et al. do not disclose thereby allowing the frame segments to be of varying lengths. In an analogous art, Ahmadvand et al. disclose thereby allowing the frame segments (figure 4, references 74 and 74') to be of varying lengths (col. 7 line 49). One skilled in the art would have recognizes the frame segments to be of varying lengths to use the teachings of Ahmadvand et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the frame segments to be of varying lengths as taught by Ahmadvand et al. in Cheng et al.'s system with the motivation being dynamically optimized for different QoS data planes based on the QoS requirements and the radio link conditions (col. 7 lines 50-51).

For claim 3, Cheng et al. disclose wherein the controller 18 adds an indicator to each frame segment indicating whether each frame segment is the last frame segment of the

retransmission-requested frame (col. 2 lines 39-44 and col. 8 lines 12-27).

For claim 4, Cheng et al. disclose wherein the controller 18 adds to each frame segment information indicating a size of each frame segment (figure 4, col. 8 lines 12-27).

For claim 5, Cheng et al. disclose method and apparatus for segmentation and assembly of data frames for retransmission in a telecommunications system comprising the steps of:

a) sending a retransmission request for a frame that failed to be received (col. 4 lines 35-37);

c) determining whether the one or more frame segments are from the retransmission-requested frame, depending on a frame sequence number included in the one or more frame segments (figure 3, col. 7 line 56 to col. 8 line 8),

d) examining byte sequence numbers of the data stream included in the one or more frame segments, when the one or more frame segments are the retransmission-requested frames (figure 5B, col. 8 lines 57-64);

e) repeating the steps c) and d), until it is determined that the last frame segment out of the frame segments is received (figure 6, col. 11 lines 19-24); and

f) arranging normally received frames and the frame segments according to the sequence numbers (figure 5B, col. 8 lines 46-64).

Cheng et al. do not disclose b) receiving one or more frame segments, said frame segments resulting from segmenting the retransmission-requested frame. In an analogous art, Johansson et al. disclose b) receiving one or more frame segments, said frame segments resulting from segmenting the retransmission-requested frame (figure 5, col. 7 lines 4-21).

One skilled in the art would have recognized one data frame is segmented into a plurality of data segments when retransmission is requested to use the teachings of Johansson et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the data frame is segmented into a plurality of data segments when retransmission is requested as taught by Johansson et al. in Cheng et al.'s system with the motivation being to provide a detection and analysis block to detect a PDU is either missing or erroneously received, a retransmit request signal is generated, e.g., in the form of a negative acknowledgement (NACK) or a selective acknowledgement (SACK) (col. 7 lines 12-16).

However, Cheng et al. in view of Johansson et al. do not disclose thereby allowing the frame segments to be of varying lengths. In an analogous art, Ahmadvand et al. disclose thereby allowing the frame segments (figure 4, references 74 and 74') to be of varying lengths (col. 7 line 49). One skilled in the art would have recognizes the frame segments to be of varying lengths to use the teachings of Ahmadvand et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the frame segments to be of varying lengths as taught by Ahmadvand et al. in Cheng et al.'s system with the motivation being dynamically optimized for different QoS data planes based on the QoS requirements and the radio link conditions (col. 7 lines 50-51).

For claim 6, Cheng et al. disclose method and apparatus for segmentation and assembly of data frames for retransmission in a telecommunications system comprising the steps of:

placing each of the one or more data segments in a corresponding frame segment (figure 3, col. 7 lines 56-63);



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providing a frame sequence number (figure 3, reference 306) of the data frame (figure 3, reference 300) to each of the frame segments (col. 7 lines 59-60 and col. 8 lines 2-4);

providing a byte number corresponding to a start byte of each of the one or more data segment to the frame segment containing the corresponding data segment (col. 2 lines 39-44);  
and

providing an indicator in each frame segment, said indicator indicating whether the data segment in the frame segment is the last data segment of the one or more data segments of the data frame (col. 2 lines 39-44 and col. 11 lines 19-24).

Cheng et al. do not disclose segmenting data within the data frame into one or more data segments. In an analogous art, Johansson et al. disclose segmenting data within the data frame into one or more data segments (figure 5, col. 6 lines 53-65).

One skilled in the art would have recognized segmenting data within the data frame into one or more data segments to use the teachings of Johansson et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the segmenting data within the data frame into one or more data segments as taught by Johansson et al. in Cheng et al.'s system with the motivation being to provide a detection and analysis block to detect a PDU is either missing or erroneously received, a retransmit request signal is generated, e.g., in the form of a negative acknowledgement (NACK) or a selective acknowledgement (SACK) (col. 7 lines 12-16).

However, Cheng et al. in view of Johansson et al. do not disclose thereby allowing the data segments to be of varying lengths. In an analogous art, Ahmadvand et al. disclose thereby allowing the data segments to be of varying lengths (col. 4 line 14). One skilled in the art would

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have recognizes the data segments to be of varying lengths to use the teachings of Ahmadvand et al. in the system of Cheng et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the data segments to be of varying lengths as taught by Ahmadvand et al. in Cheng et al.'s system with the motivation being dynamically adjusted in response to the conditions of the communication link (col. 4 lines 14-16)

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

5. Applicant's amendment on April 15, 2004 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Contact Information***

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D Nguyen whose telephone number is 703-305-0140. The examiner can normally be reached on Monday- Friday (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 703-308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

TN  
TN

**DUCHO**  
**PRIMARY EXAMINER**

*Ducho*

*6-28-04*